AMENDMENTS TO THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) A surface plasmon resonance sensor chip, comprising:

a transparent substrate with a flat surface; and

a metal layer including a flat part of metal thin film formed on the substrate, and a plurality of metal particles that are arranged spaced apart from each other immediately above the flat part and that have a diameter between 20 nm and 150 nm, wherein the metal particles are made of a same material as the flat part. ~~concave parts or convex parts on a surface and a flat part positioned between the concave parts or the convex parts, and formed so as to cover the surface of the substrate.~~

2. – 4. (Canceled).

5. (Original) The surface plasmon resonance sensor chip according to claim 1, wherein the material of the metal layer is gold or silver.

6. (Currently Amended) A method of manufacturing a surface plasmon resonance sensor chip, the method comprising ~~the steps of~~:

forming a metal thin film on ~~one~~ a surface of a substrate through sputtering or deposition;

chemically modifying ~~the surface of~~ the metal thin film; and

immersing the chemically modified ~~substrate~~ metal thin film in [[into]] a liquid solution of metal particles.

7. (Currently Amended) A method of manufacturing a surface plasmon resonance sensor chip, the method comprising ~~the steps of~~:

immersing ~~one~~ a surface of a substrate in a liquid solution of aminosilane coupling agent;

immersing said surface of the substrate in [[into]] a liquid solution of metal particles;

cleaning the substrate; and

forming a metal thin film on ~~the one~~ said surface through sputtering or deposition.

8. (Currently Amended) A surface plasmon resonance sensor, comprising:

a surface plasmon resonance sensor chip according to ~~any one of~~ claim[[s]] 1 ~~to 5~~;

a prism arranged on the side of the chip not formed with the metal layer;

a light source for irradiating light on the chip through the prism; and

a light detector for measuring the reflectivity of the light by the metal layer.

9. (Currently Amended) A method of measurement ~~of biomolecules of irradiating the light from the optical system to~~ using the surface plasmon resonance sensor chip according to claim[[s]] 1 ~~to 5~~, the method comprising:

contacting a sample solution to a side of the sensor chip formed with the metal layer;

irradiating light from an optical system towards the chip on a side of the chip not formed with the metal layer, the light having different frequencies or angles of incidence;

detecting a light totally reflected ~~reflecting the light~~ at the interface of the metal layer and the substrate with a light detector; ~~of the chip,~~

obtaining at least two resonance frequencies or resonance angles from the intensity of the totally reflected light detected with the light detector; and

simultaneously measuring a change in a refraction index of the sample solution in a vicinity of the metal particles and at a distance of approximately a radius of the metal particles from a surface of the metal particles based on a change in one of the two resonance frequencies or the resonance angles and based on a change in the other resonance frequency or the resonance angle, and a change in the refraction index of the sample solution more distant from the detecting range of the change in the refraction index of the sample solution in the vicinity of the metal particles at a distance of about several hundred nanometers from the surface of the flat part, ~~the intensity of the reflected light with the light detector;~~

wherein the measurements are made using the resonance frequencies or the resonance angles ~~presence or the extent of interaction of biomolecules is measured from the change in intensity of the reflected light with respect to the change in frequency of the irradiated light~~.

10. (Currently Amended) [[A]] The method of measurement ~~detecting change in index of refraction of irradiating the light from the optical system to the surface plasmon resonance sensor chip~~ according to claim[[s]] ~~1 to 5~~ 9, wherein

the sample solution contains biomolecules;

the method further comprises immobilizing acceptors on the metal layer of the sensor chip; and

~~totally reflecting the light at the interface of the metal layer and the substrate of the chip, and measuring the intensity of the reflected light with the light detector; wherein~~

the presence and the extent of interaction between the biomolecules and the acceptors are obtained based on the change in ~~index of~~ the refraction index of the sample solution in

the vicinity of the metal particles and at a distance of about the radius of the metal particles from the surface of the metal particles ~~based on interaction of molecules at the metal layer surface, and change in index of refraction based on interaction with solvent in the vicinity of the metal layer are respectively detected by measuring the change in the resonance angle of the reflected light~~.